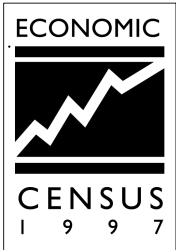


Vehicle Inventory and Use Survey



EC97TV-MI
Issued March 1999

Michigan

The Vehicle Inventory and Use Survey (VIUS) provides data on the physical and operational characteristics of the Nation's truck population. This survey is conducted every 5 years as part of the economic census. Title 13 of the United States Code (Sections 131, 191, and 224) directs the Census Bureau to take the economic census every 5 years, covering years ending in 2 and 7.

The 1997 VIUS is a probability sample of private and commercial trucks registered (or licensed) in the United States as of July 1, 1997. This survey excludes vehicles owned by Federal, state, or local governments; ambulances; buses; motor homes; farm tractors; unpowered trailer units; and trucks reported to have been sold, junked, or wrecked prior to July 1, 1996. A sample of about 131,000 trucks was surveyed to measure the characteristics of nearly 75 million trucks registered in the United States.

Since many states allow pickups, small vans, and sport utility vehicles to be registered as either cars or trucks, passenger car files were searched and any such vehicles were included in the sampling frame. Some vehicles, such as "off-highway" trucks used exclusively on private property, do not have to be registered. These vehicles were not included in the sampling frame and had no chance of being selected.

The annual vehicle registration date varies among the states. A few states use the calendar year for registering all vehicles. Most states require owners to register their vehicles on a staggered basis to permit a distribution of the renewal workload throughout all months. Most states also allow preregistration or permit "grace periods" to better distribute the annual registration workload.

Registration practices for commercial vehicles differ greatly among the states. Some states register a tractor-semitrailer combination as a single unit; others register the tractor and the semitrailer separately. For either method of registration, only the power units are included in the registered truck counts.

PURPOSE AND USE OF DATA

The economic census is the major source of facts about the structure and functioning of the Nation's economy. It provides the framework for such composite measures as the gross domestic product, input/output measures, production and price indexes, and other statistical series that measure short-term changes in economic conditions.

VIUS data are of considerable value to government, business, industry, academia, and the general public. Data on the number and types of vehicles and how they are used are important in studying the future growth of transportation and are needed in calculating fees and cost allocations among highway users. The data also are important in evaluating safety risks to highway travelers and in assessing the energy efficiency and environmental impact of the Nation's truck fleet. Businesses and others make use of these data in conducting market studies and evaluating market strategies; assessing the utility and cost of certain types of equipment; calculating the longevity of products; determining fuel demands; and linking to, and better utilizing, other data sets representing limited segments of the truck population.

COMPARABILITY WITH PREVIOUS SURVEYS

The results of the 1997 VIUS are comparable to the 1992 and prior Truck Inventory and Use Surveys (TIUS). We changed the survey name to account for areas of future expansion, including the addition of automobiles and buses. The following specific changes were made:

1. **Airbag(s).** Respondents were asked to report if the vehicle had any airbags.
2. **Carrying hazardous materials.** A data line was added to show the total number of trucks carrying any kind of hazardous materials.



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3. **Supplementary sample.** Trucks registered in a state other than the one listed on their mailing address were not included in previous TIUS sampling frames. To include these trucks in the 1997 VIUS, a supplementary sample was selected. These trucks make up approximately 1.5 percent of the total number of trucks registered in the United States. For more details, see the **SAMPLE DESIGN** section.

EXPLANATION OF TERMS

Major use. This item is based on the business or the part of the business in which the vehicle was used. The 15 specific major use categories are self explanatory. Responses in the "Other" category were recoded, if possible, to one of the specific categories. The category "Not in use" in Table 2 includes vehicles which, though licensed, were not operated or were wrecked or inoperative for more than 6 months during 1997.

Body type. This category describes the type of body that is either permanently attached to the power unit (i.e., straight or single-unit truck) or most frequently used with a truck tractor as a tractor-trailer combination.

Minivans. This category includes minivans that are manufactured on either a truck or passenger car chassis.

Home base. This is the location where the vehicle was usually parked when it was not on the road (a farm, terminal, factory, mine, or other place where the vehicle is stationed).

No home base. This category indicates that a vehicle (usually an over-the-road truck tractor or consumer one-way rental) did not operate from one specific home base location.

Range of operation. This category defines the usual trip length from the vehicle's home base. Vehicles with no home base are defined below based on the vehicle's average trip length.

1. **Local.** Trips of 50 miles or less.
2. **Short range.** Trips of 51 to 100 miles.
3. **Short range-medium.** Trips of 101 to 200 miles.
4. **Long range-medium.** Trips of 201 to 500 miles.
5. **Long range.** Trips of 501 miles or more.
6. **Off-the-road.** Trips with minimal use of public roads (usually associated with construction and farming activities).

Vehicle size. This classification is determined by the average vehicle weight (defined as the empty weight of the vehicle plus the average weight of the load carried) during 1997. The four size classes are:

1. **Light.** The average vehicle weight is 10,000 pounds or less.
2. **Medium.** The average vehicle weight is 10,001 to 19,500 pounds.
3. **Light-heavy.** The average vehicle weight is 19,501 to 26,000 pounds.
4. **Heavy-heavy.** The average vehicle weight is 26,001 pounds or more.

Operator classification. The primary operation of the vehicle, defined as follows:

1. **Business use.** This is a vehicle operated by a private owner or a company that transports its own materials or merchandise.
2. **Personal transportation.** This is a vehicle operated for personal use, such as pleasure driving, travel to work, carpool, etc.
3. **For hire.** Vehicles with this classification are defined by either of the following:
 - a. **Motor carrier.** This is a vehicle operated by a company whose primary business is to provide transportation services carrying freight belonging to others.
 - b. **Owner/operator.** This is a vehicle operated by an independent trucker who drives the vehicle for himself/herself, or is on lease to a company.
 - c. **Daily rental.** This is a vehicle rented or leased out under daily or short-term rental or lease agreements (not a motor carrier).
4. **Mixed.** This is a vehicle being operated with a mixture of business use, personal transportation, and for hire classifications with equal percentages of primary use for at least 2 of the 3 categories. If the percentages were not equal, the answer was recoded to the operator classification with the highest percentage.

Type of carrier. This classification is limited to for hire, interstate operators and is defined as follows:

1. **Contract.** This is a vehicle that offers transportation services to certain shippers under contracts.
2. **Common.** This is a vehicle that offers transportation services to the general public over regular or irregular routes.
3. **Exempt.** This is a vehicle that transports commodities or provides types of services that are exempt from federal regulation (could also operate within exempt commercial zones).

Products carried. This item defines broad classifications of products and special categories of materials carried by trucks.

Hazardous materials. This item identifies those trucks that regularly transport hazardous materials in quantities large enough to require a placard under the Code of Federal Regulations, Title 49, (CFR.177.823) Transportation.

Truck fleet size. This is the number of trucks operated by a truck owner for his/her entire operation. The data shown in the "Truck Fleet Size" section of the tables are based on the number of trucks found in fleets of specified size and not the number of fleets.

SAMPLE DESIGN

The 1997 VIUS is a probability sample of about 131,000 trucks registered in the United States as of July 1, 1997. The total sample size for Michigan is 2,653 truck registrations. This survey consists of an initial and a supplementary sample of truck registrations. A description of each sample follows.

Initial sample. The sampling frame for the initial universe was constructed from files of active truck registrations for the 50 states and the District of Columbia. All registrations on the sampling frame were identified as being active as of July 1, 1997.

The frame was stratified by geography and truck characteristics. The 50 states and the District of Columbia made up the 51 geographic "state" strata for the initial sample. Body type and gross vehicle weight (GVW) determined the following five truck strata: (1) pickups; (2) vans, minivans, and panels; (3) light single-unit trucks (GVW < 26,000 lb); (4) heavy single-unit trucks (GVW ≥ 26,000 lb); and (5) truck-tractors. Therefore, the sampling frame for the initial sample was partitioned into 255 geographic-by-truck strata. Within each of these strata, a simple random sample of truck registrations was selected, resulting in an initial sample of approximately 128,000 truck registrations.

Supplementary sample. Each truck represented on the sampling frame for the initial universe had associated with it a state of registration and a state as part of its mailing address. In the 1997 VIUS initial sampling frame and in previous TIUS sampling frames, a truck registered in a state other than the one listed on its mailing address was excluded. (For example, a truck registered in Florida that had a mailing address in Wisconsin was excluded from the sampling frame.) Therefore, previous TIUS estimates did not include data from these trucks. In order to represent these trucks in the 1997 VIUS estimates, a supplementary sample was selected independently from the initial sample.

The sampling frame for the supplementary universe was also stratified by geography and truck characteristics. The truck characteristics were the same ones used to stratify the frame for the initial sample. However, the geographic strata were defined differently. The 50 states and the

District of Columbia were partitioned into four mutually exclusive geographic strata. Each "state" was included in one, and only one, geographic stratum. These geographic strata were used instead of those used for the initial sample because of cost and processing constraints. Within each geographic-by-truck stratum, a simple random sample of truck registrations was selected. Thus, an additional 20 geographic-by-truck strata were used to stratify the sampling frame for the supplementary universe, resulting in a total of 275 geographic-by-truck strata from which to select truck registrations for the entire 1997 VIUS sample.

The size of the supplementary sample for the entire United States was approximately 3,000 truck registrations.

Estimation. An estimate of the number of trucks for any particular state was computed in the following manner. For the initial and supplementary samples, weighted estimates of the number of trucks for the state were computed for each of the five truck strata. The weight for a given truck was the product of two factors: the reciprocal of the truck's probability of selection and a nonresponse adjustment factor. (See the **Nonsampling error** section for a description of the nonresponse adjustment procedure.) The truck stratum estimates from the initial and supplementary samples were summed to form a state-level estimate.

DATA COLLECTION

For each selected truck, a questionnaire was mailed to the registered owner. The registered owner was requested to provide data about the truck identified by the vehicle registration information imprinted on the questionnaire, regardless of whether or not the truck was still in his or her possession. The information provided by each respondent was subjected to extensive computer edits. Questionable responses were reviewed and corrected if necessary.

RELIABILITY OF THE ESTIMATES

An estimate based on a sample survey potentially contains two types of errors: sampling and nonsampling. Sampling error occurs because characteristics differ among sampling units and because only a subset of the entire population is measured in a sample survey. Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate. The accuracy of a survey result may be affected by these two types of errors.

Sampling and nonsampling errors are often measured by the quantities, bias and variance. The bias of an estimator of an unknown population value is the difference, averaged over all possible samples of the same size and design, between the estimator and the unknown population value. Any systematic error or inaccuracy that affects the reported data from all sampling units in a similar way will cause the resulting estimates to be biased. Variance is the squared difference, averaged over all possible samples of the same size and design, between an estimator and its average value.

Descriptions of sampling and nonsampling errors for the 1997 VIUS are provided in the following sections.

Sampling error. Because the estimates are based on a sample, the Census Bureau does not expect exact agreement with the results that would be obtained from a complete enumeration of the truck registrations included in the sampling frame. However, because each truck represented on the sampling frame has a known probability of selection into the sample, it is possible to estimate the sampling variability of the survey estimates.

The particular sample used in this survey is one of a large number of samples of the same size that could have been selected using the same design. If all possible samples had been surveyed, under the same conditions, an estimate of an unknown population value could have been obtained from each sample. These samples give rise to a distribution of estimates for the unknown population value. A statistical measure of the variability among these estimates is the standard error, which can be approximated from any one sample. The standard error is defined as the square root of the variance. The coefficient of variation (or relative standard error) of an estimate is the standard error of the estimate divided by the estimate. Note that measures of sampling variability, such as the standard error or coefficient of variation, are estimated from the sample and are also subject to sampling variability. (Technically, we should refer to the estimated standard error or the estimated coefficient of variation of an estimator.) It is important to note that the standard error and coefficient of variation only measure sampling variability. They do not capture any systematic biases in the estimates. Columns C and F in Table 2 show standard errors, while columns A, B, D, and E show coefficients of variation of their corresponding estimates. (All coefficients of variation are expressed as percentages.)

The estimate from a particular sample and the approximate standard error associated with the estimate can be used to construct a confidence interval. A confidence interval is a range about a given estimator that has a specified probability of containing its corresponding, unknown population value. If, for each possible sample, an estimate of an unknown population value and its approximate standard error were obtained, then:

1. For approximately 90 percent of the possible samples, the interval from 1.65 standard errors below to 1.65 standard errors above the estimate would include the unknown population value.
2. For approximately 95 percent of the possible samples, the interval from two standard errors below to two standard errors above the estimate would include the unknown population value.

Nonsampling error. Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate and may also occur in censuses. It is often helpful to think of nonsampling error as arising from

deficiencies or mistakes in the survey process. In the 1997 VIUS, nonsampling error can be attributed to many sources: (1) inability to obtain information about all trucks in the sample; (2) response errors; (3) differences in the interpretation of the questions; (4) mistakes in coding or keying the data obtained; and (5) other errors of collection, response, coverage, and processing. Although no direct measurement of the potential biases because of nonsampling error has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize its influence.

A potential source of bias in the estimates is nonresponse. Nonresponse is defined as the inability to obtain all the intended measurements or responses about all the selected trucks. Two types of nonresponse are often distinguished. Unit nonresponse is used to describe the inability to obtain any of the substantive measurements about a sampled truck. In most cases of unit nonresponse, the questionnaire was never returned to the Census Bureau after several attempts to elicit a response. For Michigan, approximately 85.0 percent of the questionnaires were returned with substantive data. Item nonresponse occurs either when a question is unanswered or the response to the question fails computer edits. The procedures used to account for unit and item nonresponse are discussed below.

Unit nonresponse is handled in the estimation procedure by reweighting. To apply this method of nonresponse adjustment, we make the assumption that the population of trucks can be divided into a finite number of mutually exclusive adjustment cells so that within each cell, all the population elements possess similar characteristics and share a similar probability of responding, if selected in the sample. The adjustment cells for the 1997 VIUS are identical to the sampling strata. A nonresponse adjustment factor is computed for each adjustment cell and is equal to the ratio of the number of truck registrations selected into the sample to the number of responses received within each adjustment cell. In this sense, reweighting allocates characteristics to the nonrespondents in proportion to the characteristics observed for the respondents within each adjustment cell. The amount of bias introduced by this nonresponse adjustment procedure depends on the extent to which the nonrespondents differ, characteristically, from the respondents in each adjustment cell.

For item nonresponse, a missing value is replaced by a predicted value obtained from an appropriate model for nonresponse. This procedure is called imputation. To impute annual miles and lifetime miles, we divide the sample into a finite number of mutually exclusive cells based on state of registration, truck type, and model year. For each cell, estimates of average annual miles and average lifetime miles are computed based on those trucks in the cell for which annual miles and lifetime miles have been reported. Missing values are then replaced with the appropriate average values. A slightly different imputation procedure is used for length and average weight (empty weight plus cargo weight). For these data items, we replace a missing

value with data from a truck with similar characteristics for which length and average weight have been reported.

For all other data items, no imputation is performed. Instead, separate estimates are published in a “Not reported” category. For example, a respondent who did not indicate the major use of his or her truck would be included in the estimate for the “Not reported” category. Users of the estimates should exercise caution when allocating the estimate for the “Not reported” category to the estimates for the reported categories in the proportions observed for the reported categories. This is because the characteristics of the trucks for which we obtained information may differ significantly from those trucks for which we obtained no information.

SYMBOLS

The following symbols are used in this publication:

- N Not available or not comparable.
- S Withheld because estimate did not meet publication standards.
- V Represents less than 50 vehicles or .05 per cent.

AVAILABILITY OF ADDITIONAL DATA

Users of transportation data may be especially interested in the following reports:

Economic Census: Transportation Sector covers establishments that provide passenger and freight transportation to the general public, government, or other businesses.

Published data include kind of business, geographic location, total operating revenue, annual and first quarter payroll, and number of employees for pay period including March 12.

Commodity Flow Survey provides data on shipments by domestic establishments classified in mining, manufacturing, wholesale, and selected retail industries. Published, aggregate data feature shipment characteristics, such as value, tons, ton-miles, and average miles per shipment by mode of transportation, commodities shipped, and destinations. Geographic levels will include National, census regions, census divisions, state, and substate areas.

Transportation Annual Survey covers firms with paid employees that provide commercial motor freight transportation and public warehousing services. Data collected include operating revenue and operating revenue by source, total expenses and expenses by type, percentage of motor carrier freight revenue by commodity type, size of shipments handled, length of haul, and vehicle fleet inventory.

All results of the 1997 Economic Census are available on the Census Bureau Internet site— www.census.gov—and on compact discs (CD-ROM) for sale by the Census Bureau. Unlike previous censuses, only selected highlights are published in printed reports.

For more information on any Census Bureau product, including a description of electronic and printed reports being issued, see the web site or call Customer Services at 301-457-4100.

Table 1a. Trucks—Comparative Summary: 1997 and Earlier Years

[Percent. Data relate to state of registration. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text]

Vehicular and operational characteristics	1997	1992	1987	1982	Vehicular and operational characteristics	1997	1992	1987	1982
Total	100.0	100.0	100.0	100.0	ANNUAL MILES—Con.				
MAJOR USE					30,000 or more	8.5	7.6	6.6	4.1
Agriculture	2.7	4.0	4.0	8.0	YEAR MODEL				
Forestry and lumbering .....	.3	.4	.8	.2	1 to 2 years old	17.7	20.8	21.8	8.6
Mining and quarrying .....	.1	.2	.3	.4	3 to 4 years old	18.4	18.0	19.4	19.6
Construction	8.0	8.8	9.1	7.4	Over 4 years old	63.8	61.2	58.8	71.8
Manufacturing	1.4	2.3	2.6	2.5	VEHICLE ACQUISITION				
Wholesale and retail trade	3.3	3.9	4.5	4.8	Purchased new	37.3	48.5	52.7	55.2
For-hire transportation	1.1	1.0	2.3	1.7	Purchased used	51.7	46.6	45.8	43.5
Utilities and service	5.4	4.8	4.3	8.2	Leased from someone and not reported ¹	11.0	4.9	1.5	1.3
Personal transportation	76.3	72.8	71.8	65.8	TRUCK TYPE				
Other and not reported ¹	1.4	1.8	.2	1.1	Single-unit trucks	97.2	97.0	95.7	96.3
BODY TYPE					2 axles	96.6	96.3	94.9	95.7
Pickup, panel, minivan, and sport utility ²	94.3	93.3	90.4	89.0	3 axles or more .....	.7	.7	.8	.6
Platform and cattlerack	1.7	1.8	3.3	3.4	Combination	2.8	3.0	4.3	3.7
Van ³	1.3	1.7	1.7	2.7	3 axles .....	.6	.4	1.0	.3
Public utility .....	.2	.2	.3	.3	4 axles .....	.8	.9	1.5	1.6
Multistop or stepvans .....	.6	.6	1.4	1.1	5 axles or more	1.4	1.6	1.8	1.8
Dump .....	.8	.9	1.1	1.3	Trailer not specified	V	V	V	V
Tank for liquids or dry bulk .....	.3	.3	.4	.5	RANGE OF OPERATION				
Other and not reported ¹ .....	.9	1.2	1.5	1.7	Local	76.6	76.9	76.3	75.5
VEHICLE SIZE					Short-range	15.6	15.0	15.0	12.3
Light	94.9	94.9	93.8	92.0	Long-range	4.3	4.8	4.7	4.5
Medium	1.7	1.0	1.5	3.0	Off-the-road and not reported	3.4	3.4	4.0	7.7
Light-heavy .....	.7	1.1	1.2	1.4	FUEL TYPE				
Heavy-heavy	2.7	3.0	3.5	3.7	Gasoline	93.7	94.2	94.6	95.1
ANNUAL MILES					Diesel, liquefied gas, and other	6.2	5.8	5.3	4.9
Less than 5,000	14.6	17.7	22.3	18.1	Not reported .....	.1	V	V	V
5,000 to 9,999	16.9	19.2	21.2	29.1					
10,000 to 19,999	42.3	41.0	37.3	39.8					
20,000 to 29,999	17.6	14.4	12.6	9.0					

¹New category or modified data line from 1992.

²Includes station wagons and vans similar to panel trucks.

³Includes insulated, refrigerated and nonrefrigerated vans; drop frame vans; open top vans; and basic enclosed vans.

Table 1b. Trucks—Comparative Summary for Trucks, Excluding Pickups, Panels, Minivans, Sport Utilities, and Station Wagons: 1997 and 1992

[Percent. Data relate to state of registration. Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text]

Vehicular and operational characteristics	1997	1992	Vehicular and operational characteristics	1997	1992
Total	100.0	100.0	YEAR MODEL		
MAJOR USE			1 to 2 years old	10.3	8.5
Agriculture	10.8	11.1	3 to 4 years old	16.5	12.9
Forestry and lumbering	2.1	2.0	Over 4 years old and not reported	73.2	78.6
Mining and quarrying	1.2	.9	VEHICLE ACQUISITION		
Construction	24.5	22.2	Purchased new	42.0	42.7
Manufacturing	7.5	9.0	Purchased used	47.0	49.0
Wholesale and retail trade	17.6	15.9	Leased from someone and not reported	11.0	8.3
For-hire transportation	13.8	12.9	TRUCK TYPE		
Utilities and service	14.2	16.8	Single-unit trucks	65.8	64.7
Personal transportation	3.3	3.9	2 axles	54.3	54.9
Other and not reported	4.9	5.3	3 axles or more	11.5	9.8
BODY TYPE			Combination	34.2	35.3
Platform and cattlerack	30.0	25.1	3 axles	2.1	4.7
Van ¹	23.6	21.4	4 axles	7.4	6.0
Public utility	2.7	2.6	5 axles or more	24.7	24.6
Multistop or stepvans	10.2	8.8	Trailer not specified	V	V
Dump	13.5	13.1	RANGE OF OPERATION		
Tank for liquids or dry bulk	4.6	4.7	Local	58.3	62.1
Other and not reported	15.4	24.6	Short-range	23.6	22.7
VEHICLE SIZE			Long-range	11.7	10.0
Light	22.7	24.1	Off-the-road and not reported	6.5	5.2
Medium	17.5	15.1	FUEL TYPE		
Light-heavy	12.7	16.5	Gasoline	39.2	46.5
Heavy-heavy	47.1	44.2	Diesel, liquefied gas, and other	59.7	53.4
ANNUAL MILES			Not reported	1.1	.1
Less than 5,000	23.7	25.0			
5,000 to 9,999	15.0	15.8			
10,000 to 19,999	22.1	20.5			
20,000 to 29,999	10.9	11.4			
30,000 or more	28.4	27.5			

¹Includes insulated, refrigerated and nonrefrigerated vans; drop frame vans; open top vans; and basic enclosed vans.

Table 2. Trucks—Comparative Vehicular and Operational Characteristics: 1997 and 1992

[Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text]

Vehicular and operational characteristics	All trucks			Trucks, excluding pickups, panels, vans, sport utilities, and station wagons			Measures of variability (columns A, B, D, E—relative standard error of estimate, columns C, F—standard error of estimate)					
	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change						
	A	B	C	D	E	F	A	B	C	D	E	F
Total trucks	2 734.5	2 166.2	26.2	156.4	144.6	8.2	.8	.1	1.0	1.5	1.0	1.9
MAJOR USE												
Agriculture	74.7	86.7	−13.8	16.9	16.0	5.6	21.2	16.0	22.9	9.4	8.9	13.7
Forestry and lumbering	S	8.5	S	3.3	2.9	13.8	S	47.2	S	21.8	21.1	35.0
Mining and quarrying	S	S	S	1.9	1.3	46.2	S	S	S	29.2	33.8	65.1
Construction	217.5	191.2	13.8	38.3	32.1	19.3	12.6	10.7	18.8	5.9	5.9	9.9
Manufacturing	37.2	50.0	−25.6	11.7	13.0	−10.0	28.3	20.5	26.0	10.1	8.7	12.0
Wholesale trade	31.9	47.7	−33.1	13.8	13.3	3.8	28.5	20.7	23.6	10.1	8.9	14.0
Retail trade	58.8	35.8	64.2	13.7	9.7	41.2	24.1	24.0	55.8	10.7	12.5	23.2
For-hire transportation	30.5	21.7	40.6	21.6	18.7	15.5	21.2	14.0	35.7	6.1	6.0	9.8
Utilities	S	8.4	S	6.7	5.6	19.6	S	35.4	S	17.8	17.6	29.7
Services	136.9	96.5	41.9	15.5	18.7	−17.1	16.7	15.2	32.0	9.8	8.4	10.8
Daily rental	S	8.5	S	3.3	5.7	−42.1	S	34.4	S	27.9	14.5	18.3
One-way rental	1.8	V	N	1.8	V	N	43.4	N	N	43.4	N	N
Personal transportation	2 087.2	1 575.9	32.4	5.2	5.7	−8.8	2.2	2.0	3.9	20.4	17.7	24.7
Other	V	V	N	V	V	N	N	N	N	N	N	N
Not in use	29.5	31.0	−4.8	2.7	2.0	35.0	37.1	29.0	44.8	25.7	27.8	50.2
Not reported	V	V	N	V	V	N	N	N	N	N	N	N
BODY TYPE												
Pickup	1 176.0	1 099.7	6.9	N	N	N	1.6	.8	1.9	N	N	N
Minivan	513.1	316.5	62.1	N	N	N	7.5	7.8	17.6	N	N	N
Panel or van	243.6	293.3	−16.9	N	N	N	12.4	8.2	12.3	N	N	N
Sport utility	568.8	231.3	145.9	N	N	N	7.0	9.7	29.4	N	N	N
Station wagon	76.7	80.7	−5.0	N	N	N	23.6	18.0	28.2	N	N	N
Multistop or stepvan	16.0	12.7	26.0	16.0	12.7	26.0	11.6	11.5	20.5	11.6	11.5	20.5
Platform with added devices	8.0	7.6	5.3	8.0	7.6	5.3	13.7	14.1	20.7	13.7	14.1	20.7
Low boy or depressed center	3.0	2.8	7.1	3.0	2.8	7.1	13.2	14.0	20.7	13.2	14.0	20.7
Basic platform	35.2	28.7	22.6	35.2	28.7	22.6	6.3	6.5	11.1	6.3	6.5	11.1
Livestock truck	S	.1	S	S	.1	S	S	49.2	S	S	49.2	S
Insulated nonrefrigerated van	S	.8	S	S	.8	S	S	30.7	S	S	30.7	S
Insulated refrigerated van	4.8	5.9	−18.6	4.8	5.9	−18.6	12.7	12.4	14.4	12.7	12.4	14.4
Drop-frame van	1.3	1.4	−7.1	1.3	1.4	−7.1	26.4	20.3	29.9	26.4	20.3	29.9
Open-top van	S	.2	S	S	.2	S	S	40.2	S	S	40.2	S
Basic enclosed van	30.1	29.3	2.7	30.1	29.3	2.7	6.3	5.6	8.7	6.3	5.6	8.7
Beverage	1.5	2.3	−34.8	1.5	2.3	−34.8	27.1	14.1	19.8	27.1	14.1	19.8
Public utility	4.2	3.7	13.5	4.2	3.7	13.5	22.2	22.3	35.4	22.2	22.3	35.4
Winch or crane	2.3	1.7	35.3	2.3	1.7	35.3	21.7	27.8	47.3	21.7	27.8	47.3
Wrecker	3.9	3.5	11.4	3.9	3.5	11.4	31.2	22.4	35.6	31.2	22.4	35.6
Pole or logging .....	.6	1.5	−60.0	.6	1.5	−60.0	31.2	29.0	16.1	31.2	29.0	16.1
Auto transport .....	.7	1.3	−46.2	.7	1.3	−46.2	27.3	21.0	19.6	27.3	21.0	19.6
Service truck	4.0	2.2	81.8	4.0	2.2	81.8	24.4	29.3	69.6	24.4	29.3	69.6
Yard tractor	S	S	S	S	S	S	S	S	S	S	S	S
Oilfield truck	S	.7	S	S	.7	S	S	49.6	S	S	49.6	S
Grain body	4.1	4.9	−16.3	4.1	4.9	−16.3	19.1	16.9	21.5	19.1	16.9	21.5
Garbage hauler	3.7	4.3	−14.0	3.7	4.3	−14.0	18.8	16.5	21.3	18.8	16.5	21.3
Dump truck	21.2	18.9	12.2	21.2	18.9	12.2	7.7	7.4	12.0	7.7	7.4	12.0
Tank truck (liquids or gases)	6.3	6.5	−3.1	6.3	6.5	−3.1	14.5	13.2	18.9	14.5	13.2	18.9
Tank truck (dry bulk) .....	.9	.3	200.0	.9	.3	200.0	36.1	34.7	149.0	36.1	34.7	149.0
Concrete mixer	2.1	2.9	−27.6	2.1	2.9	−27.6	16.5	16.7	16.6	16.5	16.7	16.6
Other	S	.5	S	S	.5	S	S	28.5	S	S	28.5	S
Not reported	V	V	N	V	V	N	N	N	N	N	N	N
ANNUAL MILES												
Less than 5,000	399.9	383.8	4.2	37.1	36.1	2.8	9.3	7.5	12.5	6.2	5.7	8.6
5,000 to 9,999	462.1	416.3	11.0	23.5	22.8	3.1	8.7	7.2	12.5	8.1	7.5	11.4
10,000 to 19,999	1 157.8	888.0	30.4	34.5	29.6	16.6	4.6	4.2	8.2	6.4	6.3	10.5
20,000 to 29,999	481.9	312.9	54.0	17.0	16.5	3.0	8.5	8.6	18.6	9.2	8.5	12.9
30,000 to 49,999	187.5	135.2	38.7	17.0	18.2	−6.6	14.2	13.1	26.8	8.5	7.7	10.7
50,000 to 74,999	31.6	18.8	68.1	13.6	10.3	32.0	28.7	26.3	65.5	10.0	7.9	16.9
75,000 or more	13.7	11.2	22.3	13.7	11.2	22.3	6.7	5.6	10.7	6.7	5.6	10.7
PRIMARY RANGE OF OPERATION												
Local	2 095.0	1 665.0	25.8	91.2	89.8	1.6	2.3	1.9	3.7	2.9	2.5	3.9
Short-range	335.3	243.9	37.5	24.8	23.9	3.8	10.5	9.7	19.6	7.4	6.9	10.5
Short-range medium	92.5	80.6	14.8	12.0	8.9	34.8	20.3	17.4	30.7	10.4	10.0	19.5
Long-range medium	64.6	45.4	42.3	10.4	8.3	25.3	23.9	22.5	46.7	11.3	7.9	17.2
Long-range	53.0	57.7	−8.1	7.9	6.2	27.4	26.6	20.8	31.0	9.0	9.4	16.5
Off-the-road	70.0	69.8	.3	8.3	6.8	22.1	23.4	18.9	30.1	14.1	14.7	24.8
Not reported	S	S	S	S	S	S	S	S	S	S	S	S

See footnotes at end of table.

Table 2. Trucks—Comparative Vehicular and Operational Characteristics: 1997 and 1992—Con.

[Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text]

Vehicular and operational characteristics	All trucks			Trucks, excluding pickups, panels, vans, sport utilities, and station wagons			Measures of variability (columns A, B, D, E—relative standard error of estimate, columns C, F—standard error of estimate)					
	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change						
	A	B	C	D	E	F	A	B	C	D	E	F
WEEKS OPERATED												
Less than 1	52.8	29.6	78.4	3.5	3.6	-2.8	28.0	28.9	71.8	22.9	21.5	30.2
1 to 4	73.6	39.6	85.9	5.5	7.7	-28.6	23.3	23.8	62.0	17.8	14.1	16.3
5 to 8	51.7	63.7	-18.8	7.4	6.6	12.1	26.8	19.7	27.0	14.7	14.8	23.3
9 to 12	73.1	71.7	2.0	6.1	6.6	-7.6	23.5	18.6	30.5	16.9	14.4	20.6
13 to 16	66.3	58.8	12.8	3.2	4.8	-33.3	25.1	20.9	36.8	22.7	18.0	19.4
17 to 20	60.1	47.5	26.5	5.9	4.8	22.9	25.6	23.0	43.6	16.7	15.6	28.3
21 to 24	51.2	89.0	-42.5	5.9	6.5	-9.2	27.5	16.9	18.6	15.5	13.9	19.0
25 to 28	118.5	109.0	8.7	10.5	9.1	15.4	18.2	15.1	25.7	12.3	11.8	19.7
29 to 32	93.0	50.3	84.9	7.5	4.7	59.6	20.7	22.5	56.6	15.9	17.9	38.2
33 to 36	97.5	83.7	16.5	7.4	6.7	10.4	20.2	17.4	31.1	14.8	13.6	22.1
37 to 40	91.9	79.4	15.7	6.6	8.4	-21.4	20.9	17.6	31.7	14.0	12.3	14.8
41 to 44	103.8	72.1	44.0	9.1	9.5	-4.2	19.5	18.3	38.5	12.7	11.3	16.3
45 to 48	213.4	180.6	18.2	16.2	12.0	35.0	13.4	11.6	21.0	9.0	9.2	17.4
49 to 52	1 553.4	1 191.1	30.4	59.5	53.7	10.8	3.5	3.2	6.2	4.4	4.0	6.5
Not reported	34.1	V	N	2.0	V	N	34.6	N	N	29.1	N	N
BASE OF OPERATION												
Percentage of miles traveled outside base-of-operation state:												
Less than 25 percent	2 368.3	1 777.1	33.3	117.5	112.5	4.4	1.7	1.6	3.1	2.2	1.8	2.9
25 to 49 percent	66.6	67.1	-7	3.2	3.7	-13.5	24.9	19.5	31.4	14.2	15.1	18.2
50 to 74 percent	60.0	44.4	35.1	6.1	4.5	35.6	25.6	23.8	47.3	11.9	10.9	21.9
75 to 100 percent	23.9	49.7	-51.9	5.5	7.0	-21.4	37.5	22.0	20.9	12.6	10.1	12.8
No home base	2.1	92.8	-97.7	2.1	10.1	-79.2	26.9	16.2	.7	26.9	10.3	6.0
Not reported	208.0	135.1	54.0	21.0	6.8	208.8	13.4	13.7	29.5	8.9	14.3	51.9
VEHICLE SIZE												
Light	2 595.5	2 056.4	26.2	35.6	34.9	2.0	.9	.1	1.1	6.7	6.0	9.2
Medium	45.6	21.8	109.2	27.4	21.8	25.7	20.2	8.1	45.6	8.1	8.1	14.4
Light-heavy	19.8	23.9	-17.2	19.8	23.9	-17.2	9.7	7.6	10.3	9.7	7.6	10.3
Heavy-heavy	73.6	63.9	15.2	73.6	63.9	15.2	2.6	2.3	4.0	2.6	2.3	4.0
AVERAGE WEIGHT (POUNDS)												
Less than 6,001	2 427.0	1 921.2	26.3	6.9	8.8	-21.6	1.3	.8	2.0	17.6	14.1	17.6
6,001 to 10,000	168.5	135.2	24.6	28.7	26.1	10.0	14.5	12.7	24.0	7.8	7.3	11.8
10,001 to 14,000	28.7	12.9	122.5	15.2	12.9	17.8	27.8	11.3	66.8	11.7	11.3	19.1
14,001 to 16,000	7.1	4.2	69.0	6.8	4.2	61.9	16.8	19.9	43.7	17.1	19.9	42.6
16,001 to 19,500	9.9	4.8	106.3	5.4	4.8	12.5	46.2	17.7	101.7	19.3	17.7	29.7
19,501 to 26,000	19.8	23.9	-17.2	19.8	23.9	-17.2	9.7	7.6	10.3	9.7	7.6	10.3
26,001 to 33,000	11.6	9.6	20.8	11.6	9.6	20.8	12.0	11.6	20.2	12.0	11.6	20.2
33,001 to 40,000	10.0	9.4	6.4	10.0	9.4	6.4	11.1	9.6	15.6	11.1	9.6	15.6
40,001 to 50,000	12.3	9.2	33.7	12.3	9.2	33.7	7.9	8.1	15.1	7.9	8.1	15.1
50,001 to 60,000	8.9	8.2	8.5	8.9	8.2	8.5	8.1	7.9	12.2	8.1	7.9	12.2
60,001 to 80,000	20.0	19.2	4.2	20.0	19.2	4.2	4.4	4.2	6.3	4.4	4.2	6.3
80,001 to 100,000	3.5	3.5	V	3.5	3.5	V	12.7	10.7	16.6	12.7	10.7	16.6
100,001 to 130,000	2.7	1.6	68.8	2.7	1.6	68.8	14.9	15.0	35.0	14.9	15.0	35.0
130,001 or more	4.7	3.3	42.4	4.7	3.3	42.4	11.7	10.7	22.3	11.7	10.7	22.3
Not reported	V	V	N	V	V	N	N	N	N	N	N	N
TOTAL LENGTH (FEET)												
Less than 20.0	2 597.9	2 037.6	27.5	42.5	31.0	37.1	.9	.2	1.1	5.9	6.5	12.0
20.0 to 27.9	44.3	53.9	-17.8	43.8	47.8	-8.4	5.7	8.5	8.4	5.7	4.6	6.7
28.0 to 35.9	35.9	27.8	29.1	18.3	19.3	-5.2	24.9	18.6	40.2	8.7	7.8	11.1
36.0 to 40.9	6.7	7.0	-4.3	6.7	6.8	-1.5	14.6	12.9	18.7	14.6	13.0	19.4
41.0 to 44.9	S	3.2	S	3.9	3.2	21.9	S	15.3	S	20.8	15.3	31.2
45.0 or more	41.4	36.5	13.4	41.2	36.5	12.9	2.5	2.1	3.7	2.5	2.1	3.7
Not reported	V	V	N	V	V	N	N	N	N	N	N	N
YEAR MODEL												
1998	S	N	N	1.0	N	N	S	N	N	36.1	N	N
1997	219.1	N	N	6.8	N	N	13.5	N	N	13.8	N	N
1996	255.6	N	N	8.3	N	N	12.4	N	N	12.1	N	N
1995	239.7	N	N	13.2	N	N	12.6	N	N	11.3	N	N
1994	264.5	N	N	12.6	N	N	12.1	N	N	11.5	N	N
1993	197.5	S	S	8.1	S	S	14.2	S	S	13.0	S	S
1992	179.3	178.5	.4	6.4	4.6	39.1	14.9	11.9	19.1	14.7	14.5	28.9
1991	170.3	246.0	-30.8	7.0	6.6	6.1	15.3	10.0	12.7	14.8	13.7	21.4
1990	179.1	188.6	-5.0	8.5	8.5	V	14.9	11.5	17.9	13.5	11.8	17.9
1989	148.2	201.1	-26.3	9.4	10.2	-7.8	16.4	11.0	14.5	13.3	10.6	15.7
1988	157.8	159.6	-1.1	10.4	8.5	22.4	15.8	12.5	19.9	12.5	11.4	20.7
Pre-1988	713.4	1 165.7	-38.8	64.7	105.2	-38.5	6.4	3.2	4.4	4.0	2.1	2.8
Not reported	V	V	N	V	V	N	N	N	N	N	N	N

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VEHICLE ACQUISITION												
Purchased new	1 020.6	1 049.9	−2.8	65.7	61.8	6.3	5.1	3.6	6.1	4.1	3.6	5.8
Purchased used	1 412.8	1 009.6	39.9	73.5	70.8	3.8	3.8	3.7	7.5	3.7	3.3	5.2
Leased from someone else	281.8	90.3	212.1	16.0	10.0	60.0	11.5	16.3	62.3	9.5	10.9	23.2
Not reported	S	16.4	S	1.1	2.0	−45.0	S	38.7	S	37.4	27.8	26.8
LEASE CHARACTERISTICS^{2 3}												
Leased without driver	29.3	18.0	62.8	29.3	18.0	62.8	7.0	7.3	16.5	7.0	7.3	16.5
Leased with driver other than owner-operator	1.9	2.5	−24.0	1.9	2.5	−24.0	21.3	18.2	20.8	21.3	18.2	20.8
Leased with owner-operator	6.4	3.9	64.1	6.4	3.9	64.1	14.9	13.7	33.0	14.9	13.7	33.0
Provisions of lease:												
Financing	10.4	6.3	65.1	10.4	6.3	65.1	11.4	14.2	30.1	11.4	14.2	30.1
Full maintenance	11.0	5.9	86.4	11.0	5.9	86.4	10.4	10.8	28.0	10.4	10.8	28.0
Maintenance on specific parts	S	.3	S	S	.3	S	S	39.0	S	S	39.0	S
Payment of taxes	11.4	4.8	137.5	11.4	4.8	137.5	10.5	10.7	35.5	10.5	10.7	35.5
Obtaining licenses and permits	11.9	6.5	83.1	11.9	6.5	83.1	9.9	9.8	25.5	9.9	9.8	25.5
Record keeping for leased trucks	9.9	4.7	110.6	9.9	4.7	110.6	10.6	10.8	32.0	10.6	10.8	32.0
Other	S	1.1	S	S	1.1	S	S	30.4	S	S	30.4	S
PRIMARY OPERATOR CLASSIFICATION												
Not for hire	2 696.3	2 135.9	26.2	131.5	120.2	9.4	.8	.1	1.1	1.9	1.6	2.7
Business use	545.1	487.7	11.8	125.2	113.8	10.0	7.3	6.0	10.6	2.1	1.8	3.0
Personal transportation	2 110.6	1 605.3	31.5	6.1	6.2	−1.6	2.1	1.9	3.7	18.7	16.8	24.9
Mixed—business use/personal transportation	40.6	42.8	−5.1	S	S	S	32.9	25.5	39.5	S	S	S
For hire	30.5	21.7	40.6	21.6	18.7	15.5	21.2	14.0	35.7	6.1	6.0	9.8
Motor carrier	13.6	13.4	1.5	13.6	13.4	1.5	7.2	7.5	10.5	7.2	7.5	10.5
Owner/operator	5.0	3.3	51.5	5.0	3.3	51.5	15.0	11.1	28.0	15.0	11.1	28.0
Independent	2.1	1.3	61.5	2.1	1.3	61.5	21.4	19.4	45.7	21.4	19.4	45.7
Leased to a company	2.9	2.1	38.1	2.9	2.1	38.1	20.8	13.6	34.4	20.8	13.6	34.4
Not reported	1.8	1.2	50.0	1.8	1.0	80.0	26.4	32.0	61.4	26.4	32.9	74.9
Daily rental	S	8.5	S	3.3	5.7	−42.1	S	34.4	S	27.9	14.5	18.3
Mixed—not for hire/for hire .....	.5	V	N	.5	V	N	34.9	N	N	34.9	N	N
For-hire jurisdiction:												
Interstate	10.3	7.7	33.8	10.3	7.7	33.8	9.0	6.9	15.2	9.0	6.9	15.2
Intrastate	6.5	3.7	75.7	6.5	3.7	75.7	11.8	13.4	31.1	11.8	13.4	31.1
Local	1.5	4.3	−65.1	1.5	4.3	−65.1	28.6	17.8	11.5	28.6	17.8	11.5
Not reported	3.4	2.2	54.5	3.4	2.0	70.0	16.3	21.0	40.7	16.3	20.9	44.7
Type of carrier (interstate only):												
Contract	4.4	3.9	12.8	4.4	3.9	12.8	14.2	10.0	19.8	14.2	10.0	19.8
Common	5.5	3.5	57.1	5.5	3.5	57.1	12.7	10.8	26.2	12.7	10.8	26.2
Exempt	S	.3	S	S	.3	S	S	34.7	S	S	34.7	S
Not reported	S	S	S	S	S	S	S	S	S	S	S	S
Kind of service:												
Truckload	13.4	9.6	39.6	13.4	9.6	39.6	7.8	6.6	14.2	7.8	6.6	14.2
Less than truckload	4.3	6.0	−28.3	4.3	6.0	−28.3	15.3	13.9	14.8	15.3	13.9	14.8
Not reported	3.9	2.3	69.6	3.9	2.1	85.7	15.6	20.2	43.2	15.6	20.1	47.1
PRIMARY PRODUCTS CARRIED												
Farm products	36.0	34.2	5.3	13.6	14.4	−5.6	28.0	22.1	37.6	10.5	9.2	13.2
Live animals	S	10.3	S	2.4	1.8	33.3	S	47.7	S	25.8	24.2	46.4
Animal feed	S	15.5	S	1.0	1.3	−23.1	S	41.1	S	33.0	33.1	36.1
Mining products	S	.3	S	S	.3	S	S	45.6	S	S	45.6	S
Logs and other forest products	S	6.1	S	4.3	3.3	30.3	S	47.2	S	21.5	20.4	38.2
Lumber and fabricated wood products	S	11.8	S	5.2	3.3	57.6	S	41.8	S	18.2	19.4	42.3
Processed foods	23.0	22.9	.4	14.0	14.3	−2.1	28.3	22.2	36.1	9.5	8.6	12.6
Textile mill products	S	15.7	S	1.5	1.4	7.1	S	40.7	S	35.5	34.2	52.8
Building materials	45.6	43.1	5.8	27.5	23.2	18.5	20.0	17.8	28.3	6.5	6.8	11.2
Household goods	2.4	1.6	50.0	2.4	1.6	50.0	27.0	26.8	57.1	27.0	26.8	57.1
Furniture or hardware	2.0	2.6	−23.1	2.0	2.4	−16.7	27.8	21.7	27.3	27.8	22.0	29.7
Paper products	S	9.1	S	2.8	3.0	−6.7	S	45.0	S	22.3	21.1	28.8
Chemicals	4.2	14.8	−71.6	4.1	3.4	20.6	18.6	38.8	12.1	18.8	19.9	33.0
Petroleum	4.1	8.0	−48.8	4.1	5.2	−21.2	19.1	36.6	21.3	19.1	15.8	19.7
Plastics and/or rubber	S	S	S	1.9	1.3	46.2	S	S	S	24.5	26.1	53.7
Primary metal products	S	4.4	S	3.7	4.4	−15.9	S	15.9	S	18.1	15.9	20.1
Fabricated metal products	S	16.9	S	5.7	5.6	1.8	S	33.6	S	16.2	15.1	22.7
Machinery	26.7	17.3	54.3	8.9	5.7	56.1	33.6	33.4	73.2	14.0	15.3	32.3
Transportation equipment	13.1	28.7	−54.4	8.7	8.8	−1.1	34.8	26.3	19.9	12.2	10.4	15.8
Glass products	S	S	S	S	V	S	S	S	S	S	N	S
Miscellaneous products of manufacturing	S	S	S	1.2	1.1	9.1	S	S	S	27.3	35.6	48.9
Industrial "waste" water	S	.8	S	S	.8	S	S	45.2	S	S	45.2	S
Scrap, refuse, or garbage	S	9.1	S	5.4	6.1	−11.5	S	32.4	S	15.8	13.9	18.5
Mixed cargoes	S	17.8	S	6.4	9.0	−28.9	S	28.2	S	18.6	11.7	15.7
Craftsman's equipment	136.5	122.5	11.4	12.5	9.0	38.9	16.8	14.3	24.6	12.8	13.8	26.0

See footnotes at end of table.

VEHICLE INVENTORY AND USE SURVEY

MICHIGAN 9

Table 2. Trucks—Comparative Vehicular and Operational Characteristics: 1997 and 1992—Con.

[Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text]

Vehicular and operational characteristics	All trucks			Trucks, excluding pickups, panels, vans, sport utilities, and station wagons			Measures of variability (columns A, B, D, E—relative standard error of estimate, columns C, F—standard error of estimate)					
	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change						
	A	B	C	D	E	F	A	B	C	D	E	F
PRIMARY PRODUCTS CARRIED—Con.												
Recyclable products.....	S	S	S	1.7	1.5	13.3	S	S	S	25.0	25.6	39.6
Hazardous waste (EPA manifest).....	S	.2	S	S	.2	S	S	44.0	S	S	44.0	S
Hazardous waste (non-EPA manifest).....	V	S	S	V	S	S	N	S	S	N	S	S
Personal transportation.....	2 087.2	1 575.9	32.4	5.2	5.7	-8.8	2.2	2.0	3.9	20.4	17.7	24.7
Passengers.....	36.0	48.2	-25.3	V	V	N	35.1	24.0	31.7	N	N	N
No load carried.....	161.7	77.7	108.1	4.8	3.6	33.3	15.9	18.4	50.7	19.1	21.1	38.2
Not in use.....	29.5	31.0	-4.8	2.7	2.0	35.0	37.1	29.0	44.8	25.7	27.8	50.2
Other.....	S	S	S	1.2	1.1	9.1	S	S	S	29.4	26.2	42.0
Not reported.....	V	V	N	V	V	N	N	N	N	N	N	N
HAZARDOUS MATERIALS CARRIED³												
Carrying hazardous materials ⁴	6.9	N	N	6.9	N	N	13.9	N	N	13.9	N	N
Hazmat placard names:												
Explosives 1.1 (formerly explosive A).....	V	.4	N	V	.4	N	N	29.6	N	N	29.6	N
Explosives 1.2 (formerly explosive A).....	V	.2	N	V	.2	N	N	37.2	N	N	37.2	N
Explosives 1.3 (formerly explosive B).....	V	.2	N	V	.2	N	N	37.2	N	N	37.2	N
Explosives 1.4 (formerly dangerous).....	S	1.0	S	S	1.0	S	S	18.1	S	S	18.1	S
Explosives 1.5 (formerly blasting agents).....	V	.4	N	V	.4	N	N	27.2	N	N	27.2	N
Explosives 1.6 (formerly dangerous).....	V	.6	N	V	.6	N	N	24.5	N	N	24.5	N
Flammable gas.....	1.6	2.4	-33.3	1.6	2.4	-33.3	34.4	20.6	26.0	34.4	20.6	26.0
Nonflammable gas.....	1.3	1.5	-13.3	1.3	1.5	-13.3	33.4	19.2	33.9	33.4	19.2	33.9
Poisonous gas.....	S	.8	S	S	.8	S	S	19.9	S	S	19.9	S
Flammable.....	3.1	4.0	-22.5	3.1	4.0	-22.5	18.4	13.4	17.8	18.4	13.4	17.8
Combustible.....	1.8	2.7	-33.3	1.8	2.7	-33.3	25.7	19.3	21.8	25.7	19.3	21.8
Flammable solid.....	.9	1.6	-43.8	.9	1.6	-43.8	34.6	18.3	21.0	34.6	18.3	21.0
Spontaneously combustible (formerly flammable solid).....	S	.8	S	S	.8	S	S	20.8	S	S	20.8	S
Dangerous when wet (formerly flammable solid W).....	S	.8	S	S	.8	S	S	20.8	S	S	20.8	S
Oxidizer.....	.6	1.8	-66.7	.6	1.8	-66.7	29.7	16.8	11.9	29.7	16.8	11.9
Oxygen.....	S	.6	S	S	.6	S	S	24.5	S	S	24.5	S
Organic peroxide.....	S	.8	S	S	.8	S	S	20.8	S	S	20.8	S
Poison (formerly poisons A and B, solids, and liquids).....	1.0	1.2	-16.7	1.0	1.2	-16.7	37.7	22.3	35.6	37.7	22.3	35.6
Keep away from food.....	.7	.8	-12.5	.7	.8	-12.5	38.5	19.9	40.3	38.5	19.9	40.3
Radioactive.....	S	.8	S	S	.8	S	S	20.8	S	S	20.8	S
Corrosive.....	1.5	2.6	-42.3	1.5	2.6	-42.3	19.2	14.9	13.8	19.2	14.9	13.8
Class 9.....	.7	1.0	-30.0	.7	1.0	-30.0	40.9	17.8	30.6	40.9	17.8	30.6
No hazardous materials carried.....	2 708.6	2 142.5	26.4	144.8	125.2	15.7	.8	.1	1.0	1.7	1.6	2.7
Not reported.....	S	.8	S	S	.8	S	S	37.4	S	S	37.4	S
TRUCK FLEET SIZE												
1.....	564.4	573.8	-1.6	20.3	18.4	10.3	7.7	5.9	9.6	8.7	8.4	13.3
2 to 5.....	276.6	275.1	.5	43.2	41.2	4.9	11.2	8.8	14.3	5.5	5.1	7.8
6 to 9.....	34.8	36.7	-5.2	12.3	13.7	-10.2	28.8	22.2	34.5	10.4	9.6	12.7
10 to 24.....	63.8	40.8	56.4	19.1	18.0	6.1	22.1	19.8	46.5	7.9	7.4	11.5
25 to 99.....	44.8	35.1	27.6	17.8	17.9	-6	24.5	20.1	40.4	8.0	7.3	10.8
100 or more.....	60.4	57.3	5.4	30.3	26.0	16.5	19.2	16.6	26.7	6.8	6.2	10.7
Not reported.....	1 689.6	1 147.5	47.2	13.4	9.4	42.6	3.1	3.3	6.7	12.0	12.3	24.5
MILES PER GALLON												
Less than 5.....	20.8	23.4	-11.1	20.5	23.3	-12.0	6.7	5.6	7.8	6.7	5.6	7.7
5 to 6.9.....	42.3	47.1	-10.2	42.1	46.7	-9.9	4.5	3.9	5.4	4.5	3.9	5.4
7 to 8.9.....	26.6	32.0	-16.9	25.9	29.1	-11.0	7.8	10.6	10.9	7.9	6.5	9.1
9 to 10.9.....	219.7	128.6	70.8	27.4	22.0	24.5	12.8	13.1	31.3	8.0	8.0	14.1
11 to 12.9.....	270.6	242.8	11.4	10.6	9.4	12.8	11.9	10.0	17.3	13.4	13.4	21.3
13 to 14.9.....	344.2	267.7	28.6	3.7	3.1	19.4	10.6	9.6	18.4	23.5	24.1	40.4
15 or more.....	1 783.6	1 407.1	26.8	9.4	5.6	67.9	2.9	2.5	4.8	14.5	17.8	38.4
15 to 20.9.....	1 392.2	1 053.6	32.1	8.7	5.3	64.2	3.9	3.6	7.0	15.2	18.2	38.8
21 to 24.9.....	319.4	279.3	14.4	S	V	S	11.1	9.4	16.6	S	N	S
25 or more.....	72.0	74.2	-3.0	S	S	S	24.4	19.1	30.1	S	S	S
Not reported.....	26.7	17.6	51.7	16.8	5.5	205.5	24.5	33.0	62.4	9.6	17.0	59.7
EQUIPMENT TYPE^{3 5}												
Braking system.....	170.7	148.8	14.7	156.4	144.6	8.2	1.0	.8	1.5	1.5	1.0	1.9
Hydraulic.....	33.5	31.4	6.7	33.5	31.4	6.7	6.9	6.4	10.0	6.9	6.4	10.0
Hydraulic (power).....	45.0	47.0	-4.3	45.0	47.0	-4.3	5.7	4.7	7.1	5.7	4.7	7.1
Air.....	69.3	63.3	9.5	69.3	63.3	9.5	2.6	2.3	3.8	2.6	2.3	3.8
Other.....	2.3	1.3	76.9	2.3	1.3	76.9	30.8	37.5	84.2	30.8	37.5	84.2
Not reported.....	20.7	5.8	256.9	6.4	1.7	276.5	9.6	17.0	69.6	17.7	29.7	129.7
Antilock brakes.....	1 271.1	575.0	121.1	21.3	8.2	159.8	4.3	5.9	16.1	8.2	10.4	34.3
Power steering.....	2 497.8	1 886.9	32.4	141.2	122.7	15.1	1.4	1.3	2.6	1.8	1.7	2.8
Vehicle control aids for handicapped drivers.....	S	S	S	V	V	N	S	S	S	N	N	N
Air-conditioning.....	1 883.7	1 157.9	62.7	56.8	37.9	49.9	2.5	3.0	6.4	3.9	4.0	8.3
Wheelchair lift.....	S	S	S	V	V	N	S	S	S	N	N	N

See footnotes at end of table.

Table 2. Trucks—Comparative Vehicular and Operational Characteristics: 1997 and 1992—Con.

[Detail may not add to total because of rounding. For meaning of abbreviations and symbols, see introductory text]

Vehicular and operational characteristics	All trucks			Trucks, excluding pickups, panels, vans, sport utilities, and station wagons			Measures of variability (columns A, B, D, E—relative standard error of estimate, columns C, F—standard error of estimate)					
	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change						
	A	B	C	D	E	F	A	B	C	D	E	F
EQUIPMENT TYPE³ 5—Con.												
Engine retarder	15.8	8.8	79.5	15.8	8.8	79.5	6.6	7.3	17.6	6.6	7.3	17.6
Reflective materials	34.5	28.4	21.5	34.5	28.4	21.5	5.7	6.0	10.1	5.7	6.0	10.1
Electronic vehicle management system	548.8	332.7	65.0	13.9	5.1	172.5	7.9	8.4	19.0	8.3	14.0	44.2
Electronic vehicle identification device (transponder, etc.)	2.5	1.0	150.0	2.5	1.0	150.0	18.8	34.7	97.0	18.8	34.7	97.0
Trip recorders/on board computer system	9.5	3.9	143.6	9.5	3.9	143.6	12.0	15.4	47.8	12.0	15.4	47.8
Navigational systems	1.0	.4	150.0	1.0	.4	150.0	23.8	28.3	89.5	23.8	28.3	89.5
Airbag(s) ⁴	863.5	N	N	12.9	N	N	5.7	N	N	9.3	N	N
FUEL CONSERVATION EQUIPMENT³ 5												
Aerodynamic features	25.0	18.9	32.3	25.0	18.9	32.3	5.6	5.5	10.3	5.6	5.5	10.3
Axle or drive ratio	36.7	34.4	6.7	36.7	34.4	6.7	5.2	5.0	7.7	5.2	5.0	7.7
Fuel economy engine	41.7	37.3	11.8	41.7	37.3	11.8	4.6	4.2	6.9	4.6	4.2	6.9
Radial tires	2 196.4	1 746.7	25.7	117.8	94.1	25.2	2.1	1.7	3.4	2.3	2.4	4.2
Road speed governors	44.8	39.1	14.6	44.8	39.1	14.6	4.5	4.8	7.5	4.5	4.8	7.5
Variable fan drives	41.2	34.3	20.1	41.2	34.3	20.1	4.2	4.3	7.2	4.2	4.3	7.2
Other fuel conservation devices	7.0	9.1	-23.1	7.0	9.1	-23.1	11.5	10.0	11.7	11.5	10.0	11.7
MAINTENANCE³												
General maintenance performed by—												
Owner	1 258.4	1 158.3	8.6	50.8	50.7	.2	4.3	3.2	5.8	4.8	4.3	6.5
Company's maintenance facilities	150.1	170.4	-11.9	61.5	64.8	-5.1	13.1	10.0	14.5	4.0	3.4	5.0
Dealership's service department	700.0	561.6	24.6	19.0	13.9	36.7	6.8	5.9	11.2	8.8	9.4	17.6
Leasing company	S	11.3	S	2.5	2.7	-7.4	S	43.9	S	20.9	14.7	23.6
Independent garage	966.5	645.6	49.7	43.6	32.0	36.3	5.4	5.4	11.4	5.6	6.0	11.2
Component distributorship	S	21.4	S	2.4	1.5	60.0	S	35.0	S	23.2	22.7	51.6
No one	41.1	20.5	100.5	S	.7	S	32.6	36.4	97.9	S	49.6	S
Other	S	.6	S	S	.6	S	S	41.9	S	S	41.9	S
Not reported	90.8	58.0	56.6	12.4	3.5	254.3	20.2	21.2	45.8	11.7	20.1	82.5
Major overhauls performed by—												
Owner	178.1	226.8	-21.5	8.4	13.3	-36.8	14.9	10.3	14.2	14.0	9.9	10.8
Company's maintenance facilities	74.3	62.1	19.6	30.5	33.5	-9.0	18.7	14.7	28.4	6.4	5.5	7.7
Dealership's service department	520.3	296.4	75.5	27.2	22.8	19.3	8.2	8.8	21.1	6.6	6.6	11.1
Leasing company	S	S	S	1.2	2.4	-50.0	S	S	S	29.3	15.9	16.4
Independent garage	474.8	335.9	41.4	38.8	30.6	26.8	8.5	8.1	16.6	6.0	6.1	10.8
Component distributorship	73.8	53.3	38.5	10.8	10.4	3.8	22.5	20.6	42.3	9.6	8.5	13.3
No one	120.5	117.5	2.6	3.7	3.8	-2.6	18.5	14.9	24.4	20.1	19.1	27.2
Other	S	20.8	S	S	.7	S	S	36.0	S	S	41.9	S
Not reported	1 406.0	1 144.9	22.8	52.3	41.2	26.9	3.9	3.3	6.2	5.0	5.1	9.1
ENGINE TYPE AND SIZE												
Engine	2 734.5	2 166.2	26.2	156.4	144.6	8.2	.8	.1	1.0	1.5	1.0	1.9
Gasoline	2 563.6	2 040.4	25.6	61.3	67.3	-8.9	1.1	.5	1.5	4.3	3.1	4.8
Diesel	163.6	121.7	34.4	92.2	76.2	21.0	10.8	9.3	19.2	2.7	2.4	4.4
Liquefied gas or other	S	S	S	S	1.0	S	S	S	S	S	40.9	S
Not reported	S	S	S	S	S	S	S	S	S	S	S	S
Cylinders ⁶	2 730.1	2 166.2	26.0	156.4	144.6	8.2	.8	.1	1.0	1.5	1.0	1.9
4	223.8	307.8	-27.3	2.2	1.4	57.1	13.3	8.8	11.6	18.6	29.1	53.5
6	1 438.9	937.7	53.4	68.4	50.8	34.6	3.6	3.9	8.2	3.2	3.4	6.2
8	1 039.2	866.1	20.0	67.3	59.8	12.5	4.9	4.3	7.9	4.1	3.7	6.2
Other	V	V	N	V	V	N	N	N	N	N	N	N
Not reported	28.2	54.6	-48.4	18.5	32.6	-43.3	23.1	14.2	14.0	8.1	5.6	5.6
Cubic inch displacement ⁷	2 732.8	2 166.0	26.2	154.7	144.5	7.1	.8	.1	1.0	1.5	1.0	1.9
Gasoline engines	2 563.6	2 040.4	25.6	61.3	67.3	-8.9	1.1	.5	1.5	4.3	3.1	4.8
Less than 200	572.0	590.2	-3.1	S	.7	S	7.9	5.8	9.5	S	47.5	S
200 to 299	872.5	402.1	117.0	3.3	2.3	43.5	5.5	7.4	20.1	25.9	28.8	55.6
300 to 349	536.4	518.9	3.4	S	1.6	S	8.0	6.4	10.6	S	30.9	S
350 to 399	497.8	400.6	24.3	31.2	30.7	1.6	8.2	7.3	13.7	7.5	6.5	10.1
400 or more	38.7	49.0	-21.0	11.6	5.4	114.8	28.4	22.1	28.4	13.0	17.8	47.5
Not reported	46.2	79.6	-42.0	14.2	26.5	-46.4	25.7	15.1	17.3	11.3	7.1	7.2
Diesel engines	163.6	121.7	34.4	92.2	76.2	21.0	10.8	9.3	19.2	2.7	2.4	4.4
Less than 400	47.0	46.8	.4	11.2	7.1	57.7	26.9	22.5	35.2	12.3	14.4	29.9
400 to 599	62.1	25.1	147.4	26.5	19.2	38.0	20.4	17.0	65.6	8.1	8.0	15.7
600 to 799	16.8	12.3	36.6	16.8	12.3	36.6	5.9	7.4	13.0	5.9	7.4	13.0
800 or more	26.1	21.5	21.4	26.1	21.5	21.4	3.6	3.3	5.9	3.6	3.3	5.9
Not reported	11.6	16.1	-28.0	11.6	16.1	-28.0	7.1	6.1	6.8	7.1	6.1	6.8
Other engines	S	S	S	S	1.0	S	S	S	S	S	40.9	S
Less than 400	S	S	S	S	S	S	S	S	S	S	S	S
400 or more	S	.9	S	S	.9	S	S	45.6	S	S	45.6	S
Not reported	V	S	S	V	S	S	N	S	S	N	S	S
REFUELING LOCATION												
Central company-owned fueling facility	41.2	50.0	-17.6	41.2	50.0	-17.6	5.0	4.0	5.3	5.0	4.0	5.3
Single contract fueling facility located off-site	9.5	8.2	15.9	9.5	8.2	15.9	11.6	11.4	18.8	11.6	11.4	18.8
Public fueling stations	94.8	78.6	20.6	94.8	78.6	20.6	2.9	2.9	4.9	2.9	2.9	4.9
Other	4.3	5.5	-21.8	4.3	5.5	-21.8	18.5	15.3	18.8	18.5	15.3	18.8
Not reported	20.9	6.5	221.5	6.6	2.4	175.0	9.6	15.9	59.8	17.7	24.8	83.9

See footnotes at end of table.

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	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change	1997 trucks ¹ (thousands)	1992 trucks (thousands)	Percent change						
	A	B	C	D	E	F	A	B	C	D	E	F
TRUCK TYPE AND AXLE ARRANGEMENT												
Single-unit trucks	2 658.7	2 100.6	26.6	102.9	93.6	9.9	.8	.2	1.1	2.5	2.0	3.5
2 axles	2 640.7	2 086.5	26.6	84.9	79.4	6.9	.9	.2	1.1	3.0	2.4	4.1
3 axles	12.0	8.3	44.6	12.0	8.3	44.6	8.3	10.2	18.9	8.3	10.2	18.9
4 axles or more	6.1	5.9	3.4	6.1	5.9	3.4	9.3	10.7	14.6	9.3	10.7	14.6
Combinations	75.8	65.6	15.5	53.5	51.1	4.7	13.2	9.9	19.0	3.0	2.7	4.3
Single-unit truck with trailer	S	3.0	S	1.4	3.0	-53.3	S	21.2	S	28.9	21.2	16.4
4 axles	S	1.1	S	S	1.1	S	S	36.8	S	S	36.8	S
5 axles or more	1.0	1.9	-47.4	1.0	1.9	-47.4	30.4	26.1	21.6	30.4	26.1	21.6
Single-unit truck with utility trailer	28.0	23.2	20.7	10.1	8.8	14.8	31.8	27.8	51.0	13.7	13.2	22.0
3 axles	S	6.4	S	1.7	3.5	-51.4	S	46.0	S	39.5	21.9	21.9
4 axles	S	14.6	S	6.1	3.0	103.3	S	39.4	S	18.2	24.0	61.6
5 axles or more	2.3	2.3	V	2.3	2.3	V	23.7	23.5	33.7	23.7	23.5	33.7
Truck-tractor with single trailer	37.7	36.2	4.1	37.7	36.2	4.1	2.4	1.7	3.0	2.4	1.7	3.0
3 axles	1.7	3.3	-48.5	1.7	3.3	-48.5	18.1	11.1	10.6	18.1	11.1	10.6
4 axles	5.1	4.6	10.9	5.1	4.6	10.9	10.0	8.1	14.1	10.0	8.1	14.1
5 axles or more	31.0	28.3	9.5	31.0	28.3	9.5	3.1	2.3	4.2	3.1	2.3	4.2
Truck-tractor with double trailers	4.2	3.1	35.5	4.2	3.1	35.5	11.7	10.1	21.1	11.7	10.1	21.1
5 axles	V	.3	N	V	.3	N	N	34.7	N	N	34.7	N
6 axles	S	S	S	S	S	S	S	S	S	S	S	S
7 axles or more	4.0	2.7	48.1	4.0	2.7	48.1	12.1	10.8	24.1	12.1	10.8	24.1
Truck-tractor with triple trailers	S	V	S	S	V	S	S	N	S	S	N	S
7 axles	V	V	N	V	V	N	N	N	N	N	N	N
8 axles or more	S	V	S	S	V	S	S	N	S	S	N	S
Trailer not specified	V	V	N	V	V	N	N	N	N	N	N	N
Powered axles	2 734.5	2 166.2	26.2	156.4	144.6	8.2	.8	.1	1.0	1.5	1.0	1.9
1	1 575.4	1 489.4	5.8	101.3	98.4	2.9	3.4	2.3	4.4	2.5	1.8	3.2
2	1 155.0	673.9	71.4	50.9	43.4	17.3	4.6	5.2	11.9	2.8	2.9	4.7
3 or more	4.2	2.9	44.8	4.2	2.9	44.8	14.8	17.1	32.7	14.8	17.1	32.7
Not reported	V	V	N	V	V	N	N	N	N	N	N	N
CAB TYPE⁸												
Cab forward of engine	5.0	4.1	22.0	5.0	4.1	22.0	17.1	17.0	29.7	17.1	17.0	29.7
Cab over engine	18.7	25.3	-26.1	18.7	25.3	-26.1	8.6	6.2	7.8	8.6	6.2	7.8
Conventional cab	122.3	109.2	12.0	122.3	109.2	12.0	2.3	2.0	3.4	2.3	2.0	3.4
Cab beside engine	S	2.3	S	S	2.3	S	S	27.4	S	S	27.4	S
Other	3.5	2.4	45.8	3.5	2.4	45.8	24.8	27.0	53.4	24.8	27.0	53.4
Not reported	20.8	5.5	278.2	6.5	1.4	364.3	9.3	17.7	75.4	16.7	34.2	175.5
PICKUPS, PANELS, VANS, SPORT UTILITIES, AND STATION WAGONS												
Total	2 578.1	2 021.5	27.5	N	N	N	.8	-	-	N	N	N
Pickups	1 176.0	1 099.7	6.9	N	N	N	1.6	.8	1.9	N	N	N
Minivans	513.1	316.5	62.1	N	N	N	7.5	7.8	17.6	N	N	N
Panels or vans	243.6	293.3	-16.9	N	N	N	12.4	8.2	12.3	N	N	N
Sport utilities	568.8	231.3	145.9	N	N	N	7.0	9.7	29.4	N	N	N
Station wagons	76.7	80.7	-5.0	N	N	N	23.6	18.0	28.2	N	N	N
Driving wheels	2 578.1	2 021.5	27.5	N	N	N	.8	-	-	N	N	N
4-wheel drive	1 104.1	630.5	75.1	N	N	N	4.8	5.6	12.9	N	N	N
2-wheel drive	1 474.1	1 391.0	6.0	N	N	N	3.7	2.5	4.7	N	N	N
Front-wheel drive	575.0	416.9	37.9	N	N	N	7.6	7.2	14.4	N	N	N
Not reported	V	V	N	N	N	N	N	N	N	N	N	N

¹Includes trucks registered in this state with a mailing address of another state. These trucks were excluded from the 1992 survey.

²Lease characteristics include both "leased from" and "leased to" vehicles. Lease provisions apply to a period of 1 year or more.

³Detail does not add to total because items were not applicable or multiple responses were possible.

⁴New or modified data line from 1992.

⁵Pickups, panels, vans, minivans, and sport utilities were not requested to report the information shown in the Equipment Type section, except for power steering, antilock brakes, wheelchair lift, vehicle control aids for handicapped drivers, electronic vehicle management system, air-conditioning, and airbag(s). In the Fuel Conservation Equipment section, they reported only radial tires.

⁶Data were derived from administrative records. "Not reported" indicates those trucks for which the cylinders are unknown.

⁷Data were derived from administrative records. "Not reported" indicates those trucks for which the cubic inch displacement is unknown.

⁸Pickups, panels, vans, minivans, and sport utilities are not included.